other, and from the Class I areas for which the SO2 impacts are being modeled. The weather conditions where all baseline source SO2 emissions and increment consuming SO2 emissions will arrive at the same receptor in the Class I area at the same time (and have their cumulative impact "stacked" on top of each other) will either be a rare event or never happen at all. But this issue (whether worst case short-term impacts are actually improving or not) is never addressed when only increment consuming emissions are modeled. The baseline becomes, for the most part, irrelevant, as does the actual air quality and the cumulative impact from all sources.

The '80 regulations, from which North Dakota's PSD rules are largely derived, do not address one way or the other whether the first alternative from the '74-'77 regulations (which establishes as the baseline the second highest twenty-four and three-hour concentration for the baseline period) or the second alternative from the '78 regulations (which establishes no baseline, but models only increment consuming emissions) should be used. However, when the statutes and rules are harmonized to give meaning to related provisions and construed consistent with their plain, ordinary, and commonly understood meaning, it is clear that Congress never intended to change the method by which short term increment violations are to be determined when it enacted the PSD provisions of the '77 amendments to the CAA – in fact, Alabama Power holds that Congress intended actual monitoring and real world cumulative impacts were to play a larger role than previously and overrules related language in the "baseline concentration" section of the interpretive regulation or preamble quoted above. Further, the definitions of "baseline concentration" was changed in the '80 regulations and the definition of "actual emissions" was added. So it is improper to

continue to model using the assumptions underlying the definition of "baseline concentration" in the '78 regulations quoted above, when the definition has been changed, and the regulation itself overruled.

The August '74 rules defined "baseline concentration" as the "sum of ambient concentration levels existing in 1973." 39 FR at 31007, col. 1, § 52.21(b)(1). These concentrations could be either "measured" through monitoring or "estimated" through modeling. Id. "In the case of the maximum three-hour and twenty-four hour concentrations, only the second highest concentrations should be considered." Id. In other words, of the 365 days in 1973, the day with the second highest concentration would be the baseline. Likewise, of the 8760 three-hour periods in 1973, the three-hour period with the second highest concentration would be the baseline. Further, the increases in pollutant concentrations were defined as increases over this single "air quality concentration" (singular, not plural). Id. at col. 2, § 52.21(c)(2)(i).

The December '74 regulations kept these same definitions, although the baseline year was changed to 1974. 39 FR at 42514, col. 3, through 42515, col. 1. The November 3, 1977 regulations, the first rules promulgated after Congress passed the PSD amendments to the CAA in August of '77, also maintained the same basic definitions of "baseline concentration" and "increments and ceilings" as in the '74 rules, although the '77 rules spelled out in more detail how monitoring and modeling could be used to establish each separate baseline, and allowed the three-hour and twenty-four-hour increments to be exceeded once per year. *Compare* 42 FR at 57484 to 39 FR at 31007 and 39 FR at 42514-15.

As discussed in the summary of the history of the PSD amendments to the CAA in 1977, Congress took the Class I increments directly out of the '74 regulations and largely incorporated the rules into the statute. See pages 36-40 and 72-86 above. Congress added the provision that the three-hour and twenty-four-hour increments to be exceeded once per year, which change was incorporated into the December '77 rule changes. *Compare* CAA §163(a), 42 U.S.C.A. § 7473(a) to 42 FR at 57484 and to 39 FR at 31007 and 39 FR at 42514-15. In particular, Congress incorporated into the statute from the rule that there would be only a single "baseline concentration" (singular, not plural) for each period – annual, twenty-four hour and three hour – over which the maximum incremental increase would be measured.

> b) Maximum allowable increases in concentrations over baseline concentrations
>
> (1) For any class I area, the maximum allowable increase in concentrations of sulfur dioxide and particulate matter over the baseline concentration of such pollutants shall not exceed the following amounts:
>
> | Pollutant | Maximum allowable in- crease (in micrograms per cubic meter) |
> |---|---|
> | Particulate matter: | |
> | Annual geometric mean | 5 |
> | Twenty-four-hour maximum | 10 |
> | Sulfur dioxide: | |
> | Annual arithmetic mean | 2 |
> | Twenty-four-hour maximum | 5 |
> | Three-hour maximum | 25 |

CAA §163(b), 42 U.S.C.A. § 7473(b). (Emphasis supplied.)

In sum, Congress maintained the language from the '74 rules that the maximum increase for the twenty-four-hour and three-hour be measured over a single established twenty-four-hour and three-hour baseline concentration, and

the December '77 regulations promulgated after Congress passed the '77 PSD amendments to the CAA continued to define the twenty-four-hour and three-hour baseline concentrations as "the second highest measured or estimated concentration at a given site." 42 FR at 57484, col. 1.

Alabama Power overturned the uniform baseline date established in the June '78 PSD regulations as well as the provisions of interpretive rule or preamble dealing with "baseline concentration" at 43 FR at 26400 quoted above.

> The statutory definition of baseline concentration was in no sense a product of legislative inadvertence. Congress focused on how to define the baseline and fully understood the consequences of its chosen resolution. The Conference Committee explicitly acknowledged its adoption of the Senate definition of baseline, and the Senate report had explicitly rejected EPA's uniform date approach.

636 F.2d at 375-76 (footnotes omitted).

> The Senate definition of the baseline became Section 169(4). As explained in the discussion of the appropriate date for determining the baseline, the Senate chose "to use actual air quality data to establish the baseline," gathered if necessary through monitoring by the first permit applicant. Petitioners attempt to distinguish the injunction to use "actual data" from the use of "actual emissions," but this strikes us as contrary to common sense and, more significantly, to the clear directive of the first sentence of Section 169(4), which defines the baseline in terms of existing ambient concentration levels.

636 F.2d at 381 (footnotes omitted).

Thus, after harmonizing the statutes and the current rules to give meaning to related provisions, and construing them consistent with their plain, ordinary, and commonly understood meaning, the first alternative of determining a single twenty-four-hour and three-hour baseline concentration is the correct approach under the law. The

second alternative, modeling increment consuming emissions only, must be rejected for two reasons under the law. First, it uses floating baseline concentrations for each three-hour and twenty-four-hour period modeled, rather than a single three-hour and twenty-four-hour concentration as rejuired by both the federal statute and North Dakota's rule. CAA §163(b), 42 U.S.C.A. § 7473(b)(identifying a single "baseline concentration" over which the maximum increment increase is measured); N.D. Admin. Code §33-15-15-01(2)(b) (identifying a single "baseline concentration" over which the maximum increment increase is measured). Second, the law requires determination of existing ambient concentration levels at the baseline date. Modeling increment consuming emissions only along with changes in emissions from baseline sources ignores ambient concentration levels at the baseline date by creating a floating baseline that changes with each time period, and does not consider whether the worst case short term conditions are getting better or worse by comparing those conditions to the single short term baseline concentration required by law plus the maximum allowable increase from increment consuming sources. In contrast, use of a single baseline allows the Department to judge whether the worst case short term conditions in the park are getting better or worse – which is the underlying intent and purpose of the law as understood and adopted by Congress in 1977. Trinity Medical Center, 544 N.W.2d at 152-53 ("cardinal rule" of statutory construction is that the "interpretation must be consistent with legislative intent and done in a manner which will accomplish the policy goals and objectives of the statutes"); N.D.C.C. § 1-02-01.

5. Whether the Sources Granted Class I Variances Consume Increment in Class I Areas

As discussed at page 70 above, the '74 regulations understood that the PSD program "might have a major influence on land use patterns in many areas of the country." 39 FR at 31001, col. 1. Land use planning is a complex process involving many variables, one of which is air quality. Id. Development of land use plans in which air quality represented "a single overriding criterion" was not, in EPA's judgment, "a desirable course of action for most areas." Id. The original regulations were "therefore designed to inject consideration of air quality as one of many constraints on land use decisions, but not to mandate land use decisions based solely on air quality." Id. The regulations defined the "significance" of any air quality deterioration "in terms of the proper and desired use of an area as well as the magnitude of pollutant concentrations." Id. The "intent" of the regulations was not to restrict or prohibit economic growth, but rather to ensure that desirable growth is planned and managed in a manner which will minimize adverse impacts on the environment. Id.

Originally, the PSD regulations borrowed language from zoning law, but the August '74 regulations changed the PSD terminology from "zoning" to "classification" to "avoid confusion with conventional zoning concepts." 39 FR at 31004, col. 1; *see* page 72 above. However, under conventional zoning practices, "a zone is a relatively small area" such as a city block, whereas the areas classified under the PSD regulations, must be much larger, "often consisting of, at a minimum, several large counties." 39 FR at 31001. "Initial classification of smaller individual areas does not appear feasible because the carryover of pollution from one small area to another cannot be adequately controlled." Id. Other zoning concepts – such as state and local control over land use

and the idea that the purpose of the zone or "class" was to initiate public participation in land use decisions – were also incorporated into the original regulations. Id. For example, the August '74 regulations make clear that the level of the increments was a "subjective decision" unrelated to environmental or health effects. Id. The Class I increments were set so low to prevent health or environmental effects, but to trigger public participation in land use decisions where "almost no change from current air quality patterns are desired." 39 FR at 31004. "*The basic purpose of this classification procedure would be to require a conscious decision, made publicly with public input, that the intention of the State and the desire of the local population is to provide for the type of air quality implied by the classification.*" Id. In sum, the underlying purpose of the PSD regulations was to initiate public participation when a land use triggered a certain level of change in air quality as defined by that area's classification similar to the review of land uses in zoning.

To mitigate the harshness of a Class I designation on economic development near National Parks larger than 6000 acres (CAA § 162(a), 42 U.S.C.A. § 7472(a)), Congress enacted a "variance" procedure for new facilities that might violate the Class I increments at such national parks.similar to the variance procedure used in zoning land uses. *See* CAA § 165(d) & (e), 42 U.S.C.A. § 7475(d) & (e). North Dakota has adopted this variance procedure into its PSD rules. *See* N.D. Admin. Code § 33-15-15-01(4)(j).

As noted at pages 72-72 above, under the August '74 regulations, all NAAQS attainment areas in the United States were classified as Class II areas. 39 FR at 31007, col. 2, § 52.21(c)(3)(i). There were no areas initially designated Class I such as National Parks. Id. Any redesignation by the state of an area from Class II was subject

to the approval of the EPA Administrator. 39 FR at 31007, col. 3, § 52.21(c)(3)(ii). For lands owned by the federal government, "other than lands of exclusive federal jurisdiction," such as the federal grassland areas in western North Dakota, the states were given primary authority for redesignation subject to agreement by the Federal Land Manager (FLM). Id. at § 52.21(c)(3)(iii). The FLM could also ask the state to redesignate a federal area. Id. at § 52.21(c)(3)(iv). If the state and the FLM could not reach agreement on the redesignation of the federal land, "the Executive Office of the President will designate a classification for the area." Id. at § 52.21(c)(3)(v). For lands of "exclusive federal legislative jurisdiction" such as National Parks, the FLM had the authority to redesignate an area from its initial Class II designation "after consultation with the affected State(s)." Id. at § 52.21(c)(3)(vi). All of these provisions in the August '74 regulations dealing with authority over federally owned and controlled lands were later revised by the EPA and remained in dispute until resolved by Congress in the '77 CAA amendments.

Congress resolved this issue by designating certain areas as Class I rather than Class II, including national wilderness areas that exceed 5000 acres in size, and national parks that exceed 6000 acres in size. CAA § 162(a), 42 U.S.C.A. § 7472(a). All other federal lands were designated as Class II, however, and the power to redesignate them from the FLM's to the states. *See* pages 42-43 above; CAA § 164(b)(2), 42 U.S.C.A. § 7474(b)(2); Kerr-McGee Chem. Corp v. Dep't of Interior, 709 F.2d 597 (9th Cir. 1983).

Congress set up a variance procedure for the mandatory Class I areas that closely followed the redesignation procedure for federal lands in the August '74

regulations. *Compare* CAA § 165(d) & (e), 42 U.S.C.A. § 7475(d) & (e) with N.D. Admin. Code § 33-15-15-01(4)(j). In any case where the FLM certifies that the emissions from the facility requesting the variance "will have no adverse impact on the air quality-related values of such lands (including visibility)" the state may issue a permit to the facility "notwithstanding the fact that the change in air quality resulting from emissions from such facility will cause or contribute to concentrations which exceed the maximum allowable increases for class I areas." CAA § 165(d)(2)(C)(iii), 42 U.S.C.A. § 7475(d)(2)(C)(iii); *see also* N.D. Admin. Code § 33-15-15-01(4)(j)(4)(a). When a permit is granted with a FLM certification of "no adverse impact," the maximum allowable increase in the increment that applies to that facility is essentially the Class II increment rather than the Class I increment. CAA § 165(d)(2)(C)(iv), 42 U.S.C.A. § 7475(d)(2)(C)(iv); *see also* N.D. Admin. Code § 33-15-15-01(4)(j)(4)(b); *compare* CAA § 163(b)(2), 42 U.S.C.A. § 7475(b)(2) (the Class II increment). (As noted on page 37-39 above, the three-hour SO2 limit in the '77 CAA amendments House bill was 325 micrograms per cubic meter; the failure of the Senate-House conference committee to raise the FLM "no adverse impact" increment above 325 when they raised the Class II three-hour SO2 increments from 325 to 512 may have been an oversight.)

If the FLM denies certification of "no adverse impact" for the proposed facility or modification, the Governor may give notice and hold a public hearing concerning (1) if "the facility cannot be constructed by reason of any maximum allowable increase for sulfur dioxide for periods of twenty-four hours or less applicable to any class I area," and, in the case of Federal mandatory class I areas, (2) whether a variance will "adversely affect the air quality related values of the area (including visibility)." CAA §

165(d)(2)(D)(i), 42 U.S.C.A. § 7475(d)(2)(D)(i); *see also* N.D. Admin. Code § 33-15-15-01(4)(j)(5). If after the hearing the Governor finds (1) that the facility cannot be constructed by reason of any maximum allowable increase for sulfur dioxide for periods of twenty-four hours or less applicable to any class I area and, in the case of Federal mandatory class I areas, (2) that a variance under this clause will not adversely affect the air quality related values of the area (including visibility), the Governor, after consideration of the FLM's recommendation (if any), may grant a variance from the Class I maximum allowable increase in the short term SO2 increments, if the FLM concurs with the variance. Id. If a Governor's variance is granted, a permit may be issued. Under a Governor's variance, the maximum twenty-four-hour and three-hour increments are set by law at a level between the normal Class I and Class II increments:

MAXIMUM ALLOWABLE INCREASE
[In micrograms per cubic meter]

Period of exposure areas	Low terrain	High terrain
24-hr maximum	36	62
3-hr maximum	130	221

CAA § 165(d)(2)(D)(iii), 42 U.S.C.A. § 7475(d)(2)(D)(iii); *see also* N.D. Admin. Code § 33-15-15-01(4)(j)(7). These alternative "Governor's variance" Class I increments may be exceeded up to 18 days during any annual period, as opposed to the one exceedance allowed per year for the other Class I increments.

If the FLM does not concur with issuing a Governor's variance for a facility, the recommendations of the Governor and the FLM "shall be transmitted to the President." CAA § 165(d)(2)(D)(ii), 42 U.S.C.A. § 7475(d)(2)(D)(ii); *see also* N.D. Admin. Code § 33-15-15-01(4)(j)(6). The President may approve the Governor's recommendation if he finds that such variance is "in the national interest." Id. No Presidential finding shall be reviewable in any court. Id. The variance shall take effect if the President approves the Governor's recommendations. Id. The President must approve or deny the Governor's recommendation within ninety days after receipt of the recommendations of the Governor and the FLM. Id. The intermediate "Governor's variance" increments apply to a facility built with a Presidential variance, as well as the 18 days increments may be exceeded during any annual period. CAA § 165(d)(2)(D)(iii), 42 U.S.C.A. § 7475(d)(2)(D)(iii); *see also* N.D. Admin. Code § 33-15-15-01(4)(j)(7).

In 1993, only seven sources had been granted permits despite findings that they would cause Class I violations. Robert L. Glicksman, POLLUTION ON THE FEDERAL LANDS I: AIR POLLUTION LAW, 2 UCLA J. of Envtl. L. & Pol'y 1, 37 (1993). Since 1993, most variances have been denied by FLM's. *See* Alan P. Loeb, Esq. and Tiffany J. Elliott, PSD CONSTRAINTS ON UTILITY PLANNING: A REVIEW OF RECENT VISIBILITY LITIGATION, 34 Nat. Res. J. 231, 250-61 (1994) (reviewing six PSD variance applications that had been denied by FLM's in the previous year). North Dakota currently has two major sources, the Little Knife gas plant (Little Knife) and the Dakota Gasification plant (DGC), that are operating under FLM "no adverse impact" variances. 47 FR 41480 (September 20, 1982) (final certification for Little Knife); 58 FR 13639 (March 12, 1993) (Final certification for DGC). Two issues have been raised with

regard to these facilities: (1) whether emissions from facilities that have been granted a variance under CAA §165 should be counted in determining whether the Class I increment is being violated; and (2) whether the stepped up FLM "no adverse impact" certification applies to facilites not granted a variance.

With regard to the first issue, CAA § 165 specifically establishes a stepped up alternative Class I increment for facilities granted a FLM "no adverse impact" certification. CAA § 165(d)(2)(C)(iv), 42 U.S.C.A. § 7475(d)(2)(C)(iv); N.D. Admin. Code § 33-15-15-01(4)(j)(4)(b). This alternative increment applies to Little Knife and DGC because they have been granted FLM "no adverse impact" certifications, not the Class I SO2 increments under CAA § 163(b)(1), 42 U.S.C.A. § 7473(b)(1). There is nothing in the statute or rules that requires any sort of offset from existing facilities when a certification or variance is granted under CAA § 165 – rather the plain meaning of the law is that those facilities are subject to the alternative increment proved for in CAA § 165(d)(2)(C)(iv), 42 U.S.C.A. § 7475(d)(2)(C)(iv). Thus, SO2 emissions from Little Knife and DGC consume increment against the alternative Class I increment under CAA § 165(d)(2)(C)(iv), 42 U.S.C.A. § 7475(d)(2)(C)(iv) and N.D. Admin. Code § 33-15-15-01(4)(j)(4)(b), but not the Class I increment under CAA § 163(b)(1), 42 U.S.C.A. § 7473(b)(1). The consequences of the construction of a statute must be considered in its interpretation. N.D.C.C. § 1-02-39(5). The legal consequence of including facilities granted variances under CAA § 165 in increment consumption against non-variance PSD increment consuming facilities subject to CAA § 163(b)(1), 42 U.S.C.A. § 7473(b)(1), would be to require offsets from non-variance facilities for emissions from

variance facilities that cause violations of CAA § 163(b)(1). There is nothing in the law that suggests that was Congress's intent.

With regard to the second issue, whether the stepped up FLM "no adverse impact" certification applies to facilities not granted a variance, there is nothing in either CAA § 163(b)(1), 42 U.S.C.A. § 7473(b)(1), or CAA § 165(d), 42 U.S.C.A. § 7475(d) that would support that construction. As noted above, the variance procedure in CAA § 165(d) is based on zoning. Just as a variance to a zoning ordinance applies only to the land and facility granted the variance, the variance granted to a source under CAA § 165(d) applies only to that source. Further, there is nothing in the FLM certifications indicating that the variance was to apply to facilities other than those granted the variances. *See* 47 FR 30222 (July 12, 1982) (Little Knife, DGC, and other facilities not built), 47 FR 41480 (Little Knife and other facilities not built), and 58 FR 13639 (DGC). Thus, the alternative Class I increments do not apply to facilities not granted variances.

This does not mean that the variances do not have precedential value or binding effect. The '82 certification made the following determinations:

> Findings and Determinations: As detailed in the following statements, the Federal Land Manager concludes that the proposed new sources will have minimal impact of any kind, and no adverse impact, on either of the class I areas.
>
> 1. Plant and animal species known to be sensitive to low levels of SO 2 and particulate matter are present in each class I area. Lichens appear to be the species most sensitive to changes in air quality, and potential effects would be minimal.
>
> 2. The model predicts that SO 2 concentrations higher than the class I increments would occur in the park and refuge even if the six applicants are not permitted.
>
> 3. A cumulative frequency of occurrence analysis of the measured SO 2

data shows that high concentrations are episodic and do not represent typical conditions. Half the hourly values are an order of magnitude below the minimum detectable limit of the instruments (5 1/4 g/m 3).

4. Worst case estimates of the maximum SO 2 concentrations in Theodore Roosevelt NP and Lostwood NWR are at levels known to produce effects on only certain sensitive species, (i. e., two species of lichens).

5. Predicted concentrations of particulate matter are lower than the class I increments and are expected to contribute virtually nothing to ambient air quality levels.

6. Estimated ambient air fluoride concentrations in the park and refuge (wilderness) are insignificant.

7. Soils in the park and refuge (wilderness) are buffered and are therefore unlikely to be affected by acidic rainfall events. Similarly, the streams, ponds and rivers are also unlikely to be affected.

8. Recent field evaluations of sensitive species in each class I area found no symptoms of visible injury due to current ambient air pollution.

9. None of the applicants alone should cause a perceptible plume affecting visibility in the class I areas. An estimate of the combined effect of all sources on visibility indicates that less than a 2% reduction in annual standard visual range should occur. This is below the threshold limit for human observers. When the regional haze analysis is extended to short-term (24-hour) periods and expanded to include consideration of sulfate formation, visibility impairment to views within the class I areas probably would not be humanly perceptible. It might further be noted that visibility impairment to views of landscape features outside the boundaries of the areas would occur infrequently and would be barely perceptible.

10. Many factors exist in this analysis that tend to overpredict effects on air quality related values. In other words, the actual impact on the resources from the proposed sources will probably be even less than the analysis assumes.

11. The effects on air quality related values are not found to impair the structure and functioning of ecosystems, impair the quality of visitor experience, or diminish the national significance of either class I area.

Based on the above findings and the overall analysis, the Federal Land Manager concludes the following:

1. Granting these permits will not cause an unacceptable, adverse impact on the natural resources of Theodore Roosevelt NP or the wilderness portion of Lostwood NWR. The predicted concentrations (modeled estimates plus monitored concentrations) in the park are at levels at which studies have indicated no effects on mosses and the potential for effects on only two species of lichens. These effects would be limited in magnitude and scope, and would not threaten the basic abundance of the species in either class I area. Even in the absence of the five new sources which have requested a certification from the Federal Land Manpower, the model estimates and air quality data indicate concentrations high enough to produce these effects. It is likely that the major contributors to the monitored SO 2 concentrations are existing sources near the class I areas. In the case of the proposed gas processing plants, processing sour natural gas which is presently being flared will result in an overall decrease in SO 2 emissions. This offset in emissions cannot be quantified without an extensive emission inventory of all the oil wells that are flaring gas (probably in the thousands); however, there should be an emission reduction when the proposed gas plants begin processing the sour gas.

2. Even though the Federal Land Manager is confident of no significant risk to resources in this case, because of the potential for additional growth near these class I areas, it is recommended that several studies be undertaken to provide an extra measure of protection. Possibilities for studies include completion of vegetation maps for the class I areas; lichen monitoring studies; analysis of particulate matter burdens in bird lungs; sulfur analyses of vegetation and soils; and increased ambient monitoring. In the event these studies indicate increased potential for adverse effects, a State Implementation Plan revision might be appropriate to reduce emissions of existing and unreviewed sources.

Conclusions reached in this certification should not be extrapolated to any future permit applications in the vicinity of Theodore Roosevelt NP or Lostwood NWR. Each future application must be reviewed on a case-by-case basis, because a source's emission parameters, such as stack height, gas temperature, and geographic location, determine its interaction with other sources and hence, the potential for effects. New applicants must demonstrate to the Federal Land Manager's satisfaction that the proposed source will not cause or contribute to an adverse impact on the resources of Theodore Roosevelt NP and wilderness portion of Lostwood NWR.

This certification is based on, and therefore limited to, concentrations at or below those specified in the State of North Dakota's pollution modeling and used in the Federal Land Manager's Technical Review. This

certification specifically does not apply to any higher concentrations, such as the alternate concentrations set forth in Section 165(d)(2)(C)(iv) of the Clean Air Act.

47 FR at 41482-83.

The '93 certification for DGC provided:

Findings and Final Determination. The findings of the FLM's review of DGC's proposed modification of the Great Plains Synfuels Plant PSD permit are as follows:

1. The proposed increase in allowable emissions should not increase perceptible plume impacts or contribute to regional haze impacts in either Theodore Roosevelt NP or the Lostwood WA.

2. The substantial reductions in actual emissions from the GPSP (over 18,000 tons per year of SO sub2) should result in an overall environmental improvement compared to existing conditions at the plant.

3. There is no evidence of existing adverse impacts on biological resources due to air pollution at either Theodore Roosevelt NP or the Lostwood WA.

4. In general, the air quality in North Dakota appears to have improved, for various reasons, since the FLM's last certification of no adverse impacts in 1984.

5. The maximum predicted pollutant concentrations at Theodore Roosevelt NP and the Lostwood WA are well below the alternate Class I increments provided for in the Clean Air Act.

6. There is no reason to believe that the proposed new allowable emissions from the GPSP would cause or contribute to impairment of the structure and functioning of ecosystems at Theodore Roosevelt NP or the Lostwood WA. Likewise, there should be no impairment to the visitor experience, or diminution of the national significance of the park or wilderness area.

Based on the above findings, and the overall analysis, the FLM concludes that the proposed DGC permit modification would not cause an unacceptable, adverse impact on the natural resources of Theodore Roosevelt NP or the Lostwood WA.

These findings and review are based on emissions as proposed by the

> DGC and the analysis presented by the State of North Dakota. The conclusion reached in this review should not be extrapolated to any future permit applications in the vicinity of Theodore Roosevelt NP or the Lostwood WA. Each future application must be reviewed on a case-by-case basis, because a source's emission parameters, such as stack height, gas temperature, and geographic location, determine its interaction with other sources and hence, the potential for adverse effects. New applicants that contribute to Class I increment exceedances must demonstrate to the FLM's satisfaction that the proposed source will not cause or contribute to an adverse impact on the resources of Theodore Roosevelt NP or the Lostwood WA.

58 FR at 13640.

The FLM made these findings based on the following factual and legal considerations:

> Modeling results for the GPSP Class I increment analysis were characterized by relatively high predicted SO sub2 concentrations, but very low NO sub2 concentrations. Exceedances of the allowable 3-hr and 24-hr increments for SO sub2 were predicted at Theodore Roosevelt NP, while the 24-hr SO sub2 increment was exceeded at the Lostwood WA. No exceedances of the annual average SO sub2 or NO sub2 Class I increments were modeled at either area. The cumulative modeling results show that the highest overall 3-hr SO sub2 predicted concentration was 46.1 micrograms per cubic meter (ug/m 3) and occurred at the North Unit of Theodore Roosevelt NP. The highest overall 24-hr predicted concentration was 12.7 ug/m super3 and also occurred at the North Unit. The allowable 3-hr and 24-hr Class I increments for SO sub2 are 25 and 5 ug/m 3 , respectively. The highest 3-hr concentration when the GPSP contributed significantly (as defined by the State) was 27.2 ug/m 3 , while the highest 24- hr prediction with a significant GPSP contribution remained at 12.7 ug/m 3 . The maximum 24-hr concentration at the Lostwood WA when the GPSP contributed significantly was 5.4 ug/m super3 . Overall, at Theodore Roosevelt NP there were eight 24-hr exceedances when the GPSP contributed significantly, and one 3-hr exceedance with significant GPSP contribution. At the Lostwood WA, (PSP contributed significantly to one 24-hr Class I increment exceedance. The State of North Dakota has established the following SO sub2 Class I significant impact levels: 1.0 ug/m 3 , 3-hr; 0.2 ug/m 3 , 24-hr; and 0.1 ug/m super3 , annual average.
>
> *As mentioned previously, in the case of a permit issued under a FLM certification of no adverse impact, the source must still comply with an alternative set of PSD increments. Because only 3-hr and 24-hr SO sub2*

Class I increment exceedamces were modeled, it is only necessary to compare the maximum modeled concentrations to the alternate SO sub2 increments for these averaging times. The alternate 3-hr and 24-hr SO sub2 increments are 325 and 91 ug/m super3 , respectively. The results of the State's modeling analysis reported above show that the maximum predicted concentrations at Theodore Roosevelt NP and Lostwood WA are well below the alternative Class I increments.

57 FR at 52789-90 (italics supplied.). As noted in the italicized language, a new source seeking a variance under CAA §165 must show only compliance with the alternative short-term Class I increments that apply, not the increments under CAA § 163(b)(1).

In summary, SO2 emissions from Little Knife and DGC consume increment against the alternative Class I increment under CAA § 165(d)(2)(C)(iv), 42 U.S.C.A. § 7475(d)(2)(C)(iv) and N.D. Admin. Code § 33-15-15-01(4)(j)(4)(b), but not the Class I increment under CAA § 163(b)(1), 42 U.S.C.A. § 7473(b)(1). The alternative Class I increments do not apply to existing facilities not granted variances. However, a new source seeking a variance under CAA §165 only must show compliance with the alternative Class I increments that would apply if the variance is granted, not the increments under CAA § 163(b)(1).

6. How to Calculate Baseline Concentration for Oil and Gas Minor Sources and How to Treat 'de minimus' Sources

The areas of concern for these findings are the Class I areas located within the baseline area "Region No. 172" which consists of all counties in North Dakota except Cass County. N.D. Admin. Code § 33-15-15-01(1)(c). As noted at pages 64-65 above, to determine the baseline concentration for this area requires the same steps and analysis for minor sources as for major sources, except that the Department can in its judgment choose not to model "de minimus" emissions. *See* "De Minimus Exemptions,"

45 FR at 52705-10 (Aug. '80 PSD regulations). "Best engineering judgments" may be exercised in making these determinations. 45 FR at 52718, col. 2.

As Basin Electric notes in its September 7, 2001 letter to the Department, from 1982, when the first complete SO2 emission data from oil and gas was made available to 2000, the most recent year data is available (2001 should be available soon), total SO2 emissions from SO2 oil and gas minor sources has declined from 34,425 tons per year in 1982 to 4,900 tons in 2000. Basin 9-07-01 letter, p. 12. In addition, air quality monitoring data shows a significant improvement in air quality in the parks during this same time period both for the highest and average SO2 concentrations. Id. at 9-11. Since SO2 emissions did not decrease from Coal fired major sources during this period, the reason for the improvement in air quality is likely through the significant reductions of SO2 from the oil and gas sources. Unfortunately, the Department does not have detailed emission data and locations of minor source wells on the minor source baseline date, or the two years proceeding that date. The Department will have to use best engineering judgment in making estimates and establishing baseline concentrations for minor sources.

As noted previously baseline concentrations for minor sources are established in the same way as for major sources. *See* pages 64-67 and 88-111 above. The Department should follow the same steps for the minor sources as for the major sources. First, the Department must identify the "sources," both major and minor, that were "in existence" as of the minor source baseline date that affected the "ambient concentration levels" of SO2 in North Dakota's Class I areas at that time. The language of the rule requires that the Department determine the "actual emissions representative

of sources in existence on the applicable minor source baseline date." N.D. Admin. Code § 33-15-15-01(1)(d)(1)(a). However, since the areas of concern for potential violations are only the Class I areas in western North Dakota, the Department has to consider only those sources that affected "the ambient concentration levels" of SO2 (CAA § 169(4), 42 U.S.C.A. § 7479(4)) in these Class I areas as of the minor source baseline date.

The second issue the Department must address is what "air quality data" (CAA § 169(4), 42 U.S.C.A. § 7479(4)) are "representative" of sources in existence on the applicable minor source baseline date. To address this issue, the Department must determine the "[a]ctual source emissions" as "estimated from source records and any other information reflecting actual source operation over the two-year time period preceding the baseline date." 45 FR at 52714 at col. 2-3. The Department must then determine whether this calculation is "representative" of "normal source operation" for those sources. "If a source can demonstrate that its operation after the baseline date is more representative of normal source operation than its operation preceding the baseline date," then "the definition of actual emissions" allows the Department "to use the more representative period to calculate the source's actual emissions contribution to the baseline concentration." Id.

In sum, the same analysis for determining baseline concentration for major sources applies for minor sources. *See* pages 64-67 and 88-111 above. The Department must exercise best engineering judgment in reconstructing or estimating missing data and locations, using available monitoring data over the relevant time

period to assist this effort, and making the other factual determinations necessary to establish oil and gas baseline concentrations for the many sources involved.

7. Issues relating to the Elkhorn Ranch

CAA § 162(a)(4), 42 U.S.C.A. § 7472(a)(4), only designates national parks that exceed 6,000 acres in size as mandatory Class I areas that may not be redesignated. The statute does not address the issue of noncontiguous areas of the park that are less than 6,000 acres. The north and south units of Theodore Roosevelt National Park both individually exceed 6,000 acres, so they are both clearly Class I areas, whether the park is viewed as a whole, or as separate non-contiguous areas each of which has to exceed 6,000 acres. The Elkhorn Ranch is much smaller than 6,000 acres, so it does not necessarily meet the definition. So far, I have been unable to find any case law or legislative history that addresses this issue, or any promulgated interpretation from EPA.

When the Department began modeling for PSD compliance, and the first increment consuming sources were permitted, the Elkhorn ranch was not included in the analysis. The comments to the Department's August 7, 1981, PSD rule revisions state that the Elkhorn Ranch site was "inadvertently omitted." The comment then refers to the CAA § 163(b)(1) increments and states that out of fairness to the sources already granted permits without modeling Elkhorn ranch, a paragraph was added to the rules that states that the "Class I area increment limitations ... shall apply only to sources or modifications for which complete applications have not been filed as of the effective date of the paragraph." *See* comments to the Department's August 7, 1981, PSD rule revisions, p. 1. The rule provides:

> The class I area increment limitations of the Theodore Roosevelt Elkhorn Ranch Site of the Theodore Roosevelt National Park shall apply to sources or modifications for which complete applications were filed after July 1, 1982. The impact of emissions from sources or modifications for which permits under this chapter have been issued or complete applications have already been filed will be counted against the increments after July 1, 1982.

N.D. Admin. Code § 33-15-15-01(2)(f).

Thus, sources for which complete PSD permit applications were filed prior to July 1, 1982 should not be counted as consuming Class I increment at the Elkhorn ranch site.